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EXAMINER
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CHOULES, JACK M

ART UNIT	PAPER NUMBER
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2167

DATE MAILED: 12/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/998,704	<b>Applicant(s)</b> SLUIMAN, HARM	
	<b>Examiner</b> Jack M. Choules	<b>Art Unit</b> 2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 16-22 is/are pending in the application.
- 4a) Of the above claim(s) 16-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 20-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

This action is responsive to Election filed on 16 June 2005 and Amendment filed 20 September 2005. Claims 1-12 and 16-22 are pending in this Office Action, claims 16-19 having been withdrawn from consideration as noted herein below.

#### ***Election/Restrictions***

Applicant's election without traverse of group I including claims 1-12 and 20-22 in the reply filed on 16 June 2005 is acknowledged.

Claims 16-19 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 16 June 2005.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The Previous office action mailed 9 September 2005, contained a rejection as follows:

"Claim 12 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 12 recites "A computer readable medium." However, the specification does not support this limitation."

This examiner maintains that the 35 U.S.C. 112, rejection was clearly made in error as a medium is clearly shown and recited in figure 13, index 1306 and the discussion of this element in the specification on page 11, the last paragraph. Further it is clear that all the embodiments of the medium as set forth, in the last paragraph of page 11, are well known in the art as computer readable medium.

In response to the rejection above the applicant made amendments that invite a new rejection, which follows, thus the examiner suggests the phrase applicant removed from claim 12 be re-inserted.

**New rejections under 35 U.S.C. 112,**

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 22 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 22 is a single means claim thus subject to an undue breadth rejection and is not enabled as set forth in the MPEP.

**MPEP 2164.08(a) Single Means Claim:**

A single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. In re Hyatt, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983) (A single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known to the inventor.). When claims depend on a recited property, a fact situation comparable to Hyatt is possible, where the claim covers every conceivable structure (means) for

achieving the stated property (result) while the specification discloses at most only those known to the inventor.

Claims 1-12 and 20-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-12 and 20-22 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: there is no computer readable median the claims set forth the use by a computer of “a schema,” “a database catalog,” “an object oriented description,” and “an object oriented programming language” that are all directed to descriptive material descriptive material. It is not seen how data or descriptive material per se without a computer readable could be of any “use” to a computer.

Claims 1-9, 11, 12, 20 and 22 provides for the use of “the object,” “a schema,” “a database catalog,” “the description,” or “the language”, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 10 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: in both claims the steps allowing the object to be used by the computer for query execution according to the language of

claim 1, and in claim 21 further steps for the editing databases as reading meta data does not edit a database.

Claims 9 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: in both claims the means allowing the object to be used by the computer for query execution according to the language of claim 1, and in claim 21 further means for the editing databases as reading meta data does not edit a database.

In claims 1-12 and 20-22, the phrase 'a method' or 'at least one method' is in the body of the claim while sometimes the phrase 'a method' the examiner interprets the occurrences of a method in the body of a claim to refer to object oriented functions attached to a class or object which objected oriented functions are referred to in the art as methods, however, those occurrences of the phrase a method in the header refers to the term method as used in claim language to refer to a series of steps making up a process claim. If this interpretation is incorrect please so state. No statement to the contrary in applicant's next response will be taken as an endorsement of the interpretation of the claim language set forth here for the record.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-9 11, 12, 20 and 22 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd. App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claims 1-12 and 20-22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As to claims 1-8, 11 and 20 the claims directed to "a schema," "a database catalog," "an object oriented description," and "an object oriented programming language" as they are all directed to descriptive material per se which does not fit into a statutory class under 101, they are not directed to a process as there are no steps, they are not directed to a machine as they do not contain physical elements, the are not a manufacture because there is no physical mater or element to begin with which is changed through the manufacture, the are not directed to an composition of mater because there is no mater. Equivalent discussion in "Interim Guidelines for Examination of Patent Application for Patent Subject Matter Eligibility" annex IV OG Notices 22 November 2005) directed to signals provide definitions of the classes of invention.

First, a claimed signal is clearly not a "process" under Sec. 101 because it is not a series of steps. The other three Sec. 101 classes of machine, compositions of matter and manufactures "relate to structural entities and can be grouped as 'product' claims in order to contrast them with process claims." 1 D. Chisum, Patents Sec. 1.02 (1994). The three product classes have traditionally required physical structure or material.

"The term machine includes every mechanical device or combination of mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result." *Corning v. Burden*, 56 U.S. (15 How.) 252, 267 (1854). A modern definition of machine would no doubt include electronic devices which perform functions. Indeed, devices such as flip-flops and computers are referred to in computer science as sequential machines. A claimed signal has no physical structure, does not itself perform any useful, concrete and tangible result and, thus, does not fit within the definition of a machine.

A "composition of matter" "covers all compositions of two or more substances and includes all composite articles, whether they be results of chemical union, or of mechanical mixture, or whether they be gases, fluids, powders or solids." *Shell Development Co. v. Watson*, 149 F. Supp. 279, 280, 113 USPQ 265, 266 (D.D.C. 1957), *aff'd*, 252 F.2d 861, 116 USPQ 428 (D.C. Cir. 1958). A claimed signal is not matter, but a form of energy, and therefore is not a composition of matter.

The Supreme Court has read the term "manufacture" in accordance with its dictionary definition to mean "the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties, or combinations, whether by hand-labor or by machinery." *Diamond v. Chakrabarty*, 447 U.S. 303, 308, 206 USPQ 193, 196-97 (1980) (quoting *American Fruit Growers, Inc. v. Brogdex Co.*, 283 U.S. 1, 11, 8 USPQ 131, 133 (1931), which, in turn, quotes the *Century Dictionary*). Other courts have applied similar definitions. See *American Disappearing Bed Co. v. Arnaelsteen*, 182 F. 324, 325 (9th Cir. 1910), *cert. denied*, 220 U.S. 622 (1911). These definitions require physical substance, which a claimed signal does not have (neither does descriptive material per se). Congress can be presumed to be aware of an administrative or judicial interpretation of a statute and to adopt that interpretation when it re-enacts a statute without change. *Lorillard v. Pons*, 434 U.S. 575, 580 (1978). Thus, Congress must be presumed to have been aware of the interpretation of manufacture in *American Fruit Growers* when it passed the 1952 Patent Act.

A manufacture is also defined as the residual class of product. 1 Chisum, Sec. 1.02[3] (citing W. Robinson, *The Law of Patents for Useful Inventions* 270 (1890)). A product is a tangible physical article or object, some form of matter, which a signal is not. That the other two product classes, machine and composition of matter, require physical matter is evidence that a manufacture was also intended to require physical matter. A signal, a form of energy, does not fall within either of the two definitions of manufacture. Thus, a signal (or data per se) does not fall within one of the four statutory classes of Sec. 101.

On the other hand, from a technological standpoint, a signal encoded with functional descriptive material is similar to a computer-readable memory encoded with functional descriptive material, in that they both create a functional interrelationship with a computer. In other words, a computer is able to execute the encoded functions, regardless of whether the format is a disk or a signal.



**Further as directed to Data per se or Descriptive material Per Se:**

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

Both types of "descriptive material" are nonstatutory when claimed as descriptive material per se. Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (Claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

As to claims 9, 12 and 22, although these claims are apparently directed towards a machine as claims 9 and 22 are in means plus function format, and claim 12 is a computer, however, the recitation of the claims is limited to information per se (not on a medium) which cannot give the utility or tangible results required under 101 as the cannot provide the use to the computer or machine set forth in the claim as presently amended.

As to claims 10 and 21, although these claims are apparently directed towards a method as claims 10 and 21 recite a step, however, the recitation of the claims is limited to information per se (not on a medium) which cannot give the utility or tangible results

required under 101 as the cannot provide the use to the computer or machine set forth in the claim as presently amended.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 7-12 and 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Bergamaschi et al. [hereinafter Bergamaschi] “Object Wrapper: an object-oriented interface for relational databases.”

As per claim 1, Bergamaschi discloses a schema for storing meta data that describes at least one relational database comprising; at least one abstract class for defining at least one data type of at least one member, said abstract class including (Bergamaschi, page 44-46, “ApplicationData” class, “select” class): at least one property for indicating at least one generic Structured Query Language data type for said member (Bergamaschi, page 44-46); at least one property for indicating at least one database-specific data type name for said member (Bergamaschi, page 44-46); and at least one method for constructing at least one object instantiated from at least one class derived from said abstract class (Bergamaschi, page 44-46, “createObject” function).

As per claim 2, Bergamaschi further teaches wherein said abstract class is a first abstract class, further comprising a second abstract class for describing a user defined

data type, said second abstract class derived from said first abstract class, said second abstract class including: at least one property for indicating whether an object of at least one class derived from said second abstract class is instantiable; and at least one property for indicating whether said class derived from said second abstract class is final (Bergamaschi, page 44-46).

As per claim 3, Bergamaschi further teaches wherein said abstract class further comprises at least one property for indicating at least one default value for said type of said member (Bergamaschi, page 44-46, default construction).

As per claim 4, Bergamaschi teaches all the claimed subject matters as discussed in claim 1, and further teaches at least one property for indicating at least one mapping of said database- specific data type name to at least one Java Database Connectivity data type (Bergamaschi, page 41-43).

As per claim 5, Bergamaschi further teaches said schema is described using the Unified Modeling Language. (Bergamaschi, page 44, Figure 2 & 3).

Claims 7-12 and 20-22 are rejected on grounds corresponding to the grounds given above for claims 1-4.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bergamaschi as applied to claim 1 herein above and further in view of "XML Metadata Interchange (XML)" [hereinafter XML].

As per claim 6, Bergamaschi teaches the claimed subject matters as discussed in reference to claim 1, except for explicitly disclosing a serialized stream of meta data in the Extensible Markup Language Meta data interchange (XML) format where said meta data is stored according to the schema of claim 1. XML teaches a serialized stream of meta data in the Extensible Markup Language Meta Data Interchange (XML) format where said meta data is stored according to the schema of claim 1 (XML, page 1-5). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the schema of Bergamaschi by incorporating the Extensible Markup Language Meta data interchange format as disclosed by XML because the system would be able to use XML in exchanging data warehouse metadata.

### ***Response to Arguments***

Applicant's arguments filed 20 September 2005 have been fully considered but they are not persuasive.

As to the rejections under 35 U.S.C. 101 the applicant argued as follows the 35 U.S.C. 101 rejections "have been overcome by the present amendments, variously reciting useful, concrete, and tangible results."

The examiner respectfully disagrees because the claims all lack the elements necessary to provide useful, concrete, and tangible results in particular the claims recite descriptive material per. se. without a tangible embodiment on computer readable medium to be able to function to provide the use described on a computer. The recitation of use on a computer is simply considered an intended use, and as such does not overcome the 101 rejections. See current rejection under 101 above.

As to the rejections under 35 U.S.C. 103 the applicant argued as follows:  
“nothing is taught in pages 44-46 of the reference that is directed to anything which is database-specific.”

The examiner respectfully disagrees because the system of Bergamaschi is directed to an Object Wrapper for a single database (see the abstract on page 41). Therefore any database type treated in the system of Bergamaschi is database specific as the type is for the database the wrapper applies to and also since there is only one database in the wrapper of the system of Bergamaschi it is also global across the wrapper the examiner finds no limitations that must be in the current set of claims that requires more than one database in the system of the claims so such an interpretation is consistent with the claim language. Further as the limitations argued are directed to descriptive material per se the examiner is not required to give them patentable weight as descriptive material per se is by definition nonfunctional and non functional descriptive material need not be given any weight (see “Interim Guidelines for Examination of Patent Application for Patent Subject Matter Eligibility,” annex IV, OG Notices 22 November 2005).

When nonfunctional descriptive material is recorded on some computer-readable medium, in a computer or on an electromagnetic carrier signal, it is not statutory and should be rejected under 35

U.S.C. Sec. 101. In addition, the examiner should inquire whether there should be a rejection under 35 U.S.C. Sec. 102 or 103. The examiner should determine whether the claimed nonfunctional descriptive material be given patentable weight. The USPTO must consider all claim limitations when determining patentability of an invention over the prior art. In *re Gulack*, 703 F.2d 1381, 1385, 217 USPQ 401, 403-04 (Fed. Cir. 1983). The USPTO may not disregard claim limitations comprised of printed matter. See *Gulack*, 703 F.2d at 1384, 217 USPQ at 403; see also *Diehr*, 450 U.S. at 191, 209 USPQ at 10. However, *the examiner need not give patentable weight to printed matter absent a new and unobvious functional relationship between the printed matter and the substrate*. See *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994); *In re Ngai*, 367 F.3d 1336, 70 USPQ2d 1862 (Fed. Cir. 2004).

AND

Data structures not claimed as embodied in computer-readable media are descriptive material per se and are not statutory *because they are not capable of causing functional change in the computer*. See, e.g., *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory.

*Italics added for emphasis.*

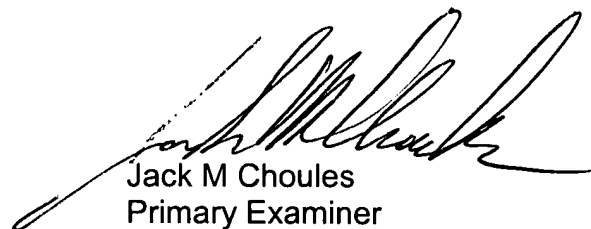
As to applicants comments directed to claims 16-19, note above that claims 16-19 were directed to a non-selected invention and as such have been withdrawn from consideration. While the previous examiner did not explicitly state this in the last office action also did not treat claims 16-19 on the merits.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack M. Choules whose telephone number is (571) 272-4109. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jean R. Homere can be reached on (571) 272-3780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jack M Choules  
Primary Examiner  
Art Unit 2167

12 December 2005